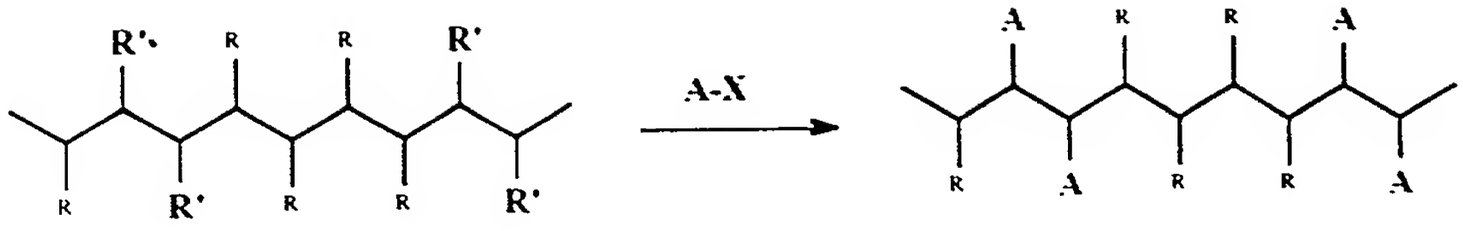
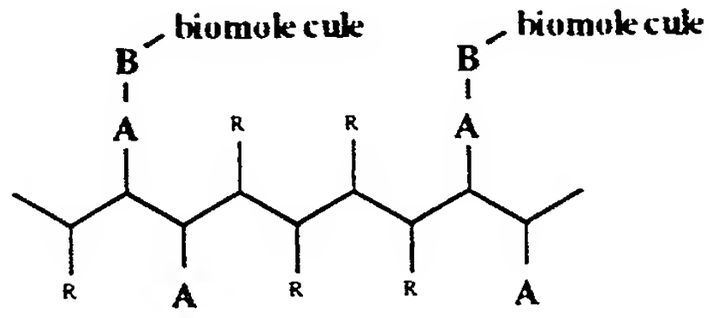
Figure 1

1) 

where R' is the same or different than R

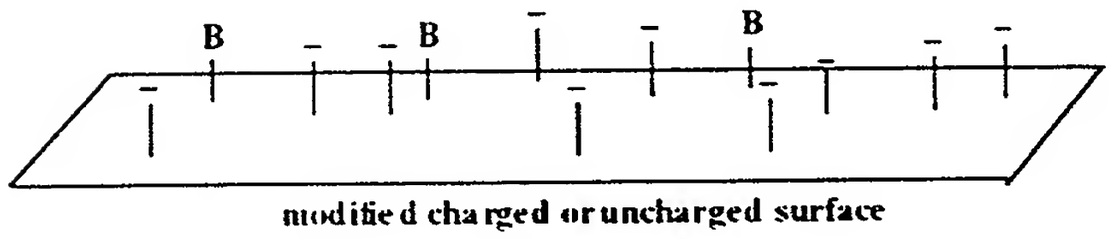
P

2) **biomolecule** —**B-X**→ **B-biomolecule**

3) **P** —**B-biomolecule**→ 

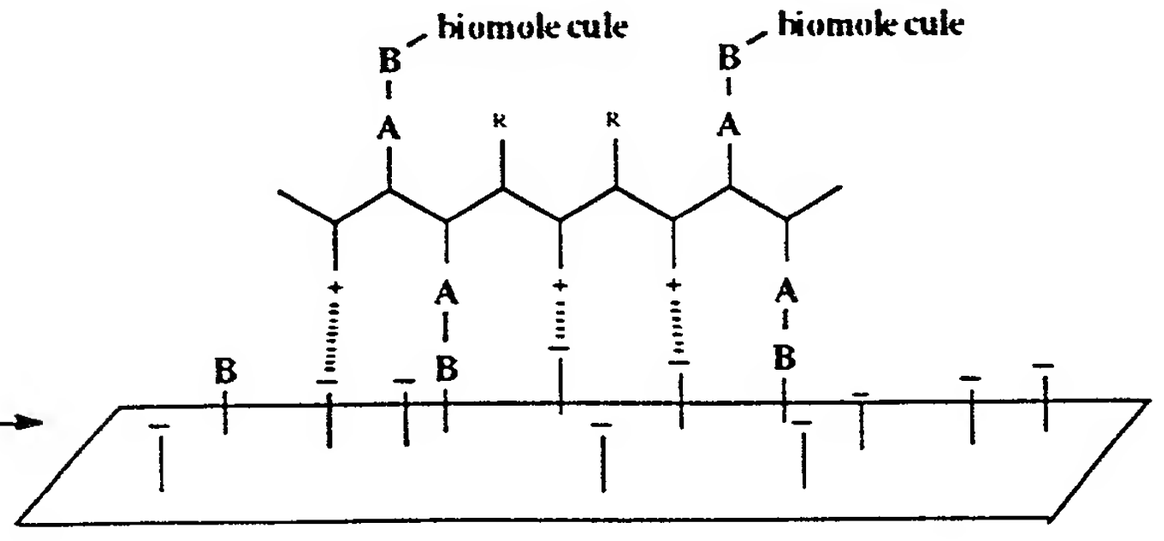
BP

biomolecule/polymer conjugate

4) 

modified charged or uncharged surface

S

5) **BP + S** → 

BPS

biopolymer/polymer/surface ternary system

Figure 2

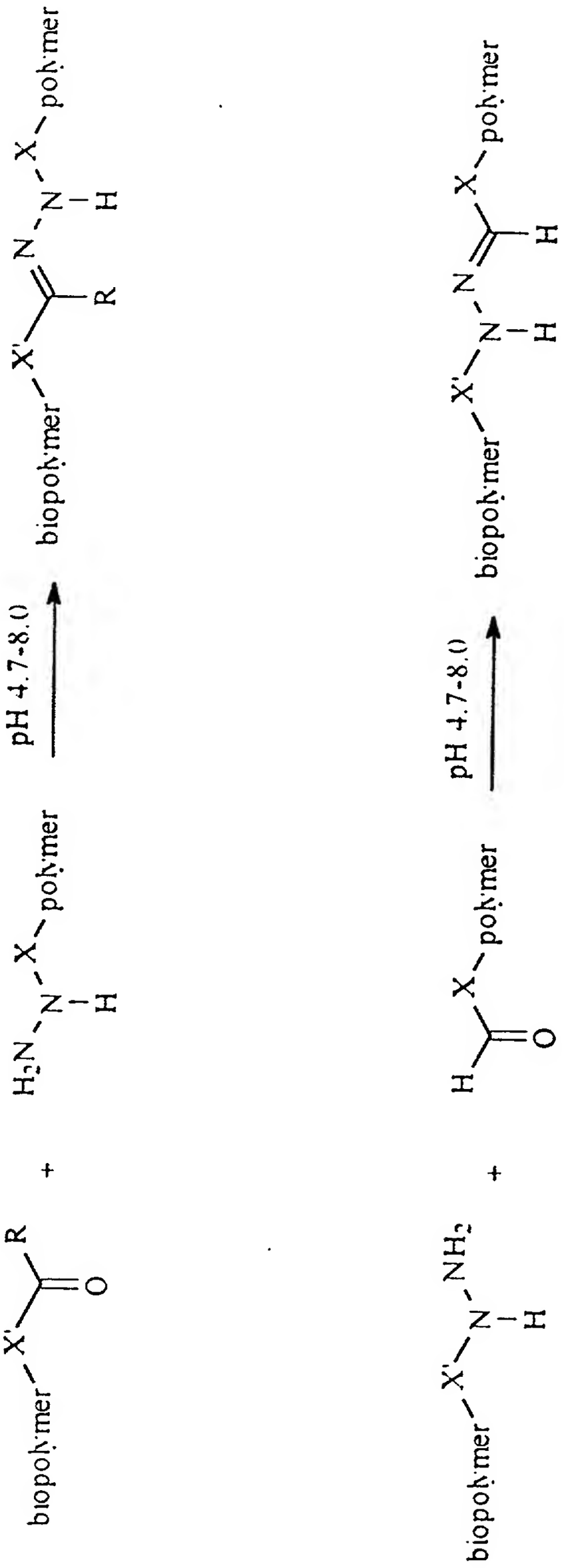
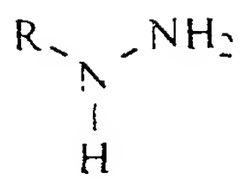
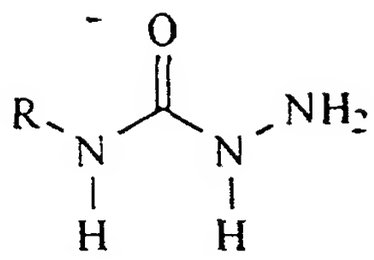

polymer
X
N
H
N
R
X'
pH 4.7-8.0
biopolymer
H2N
N
H
X
polymer
+
R
X'
O
biopolymer
polymer
X
H
N
H
N
pH 4.7-8.0
biopolymer
X'
H
X
polymer
O
+
NH2
N
H
X'
biopolymer

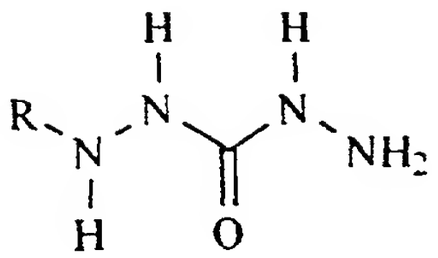
Figure 3



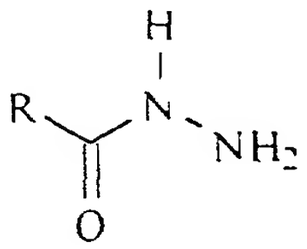
hydrazine



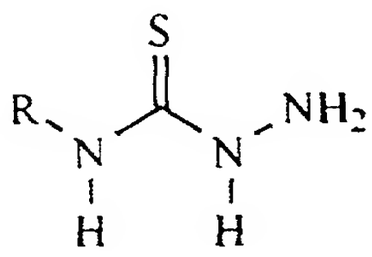
semicarbazide



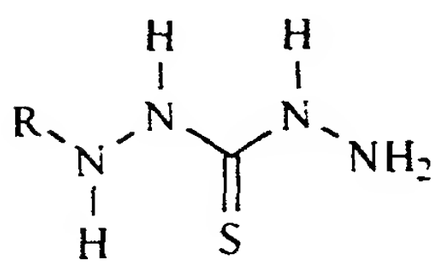
carbazide



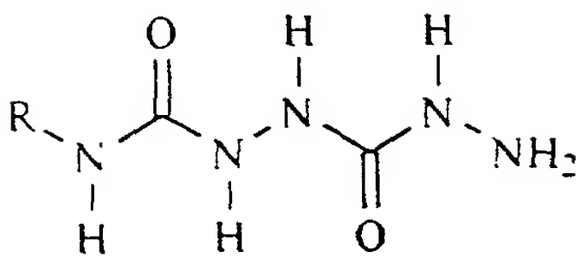
hydrazide



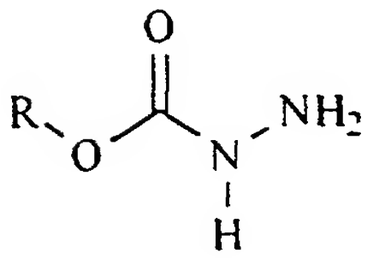
thiosemicarbazide



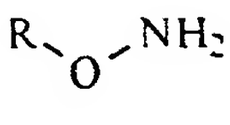
thiocarbazide



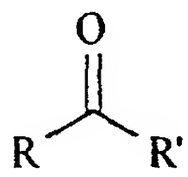
carbonic acid dihydrazine



hydrazine carboxylate



aminooxy

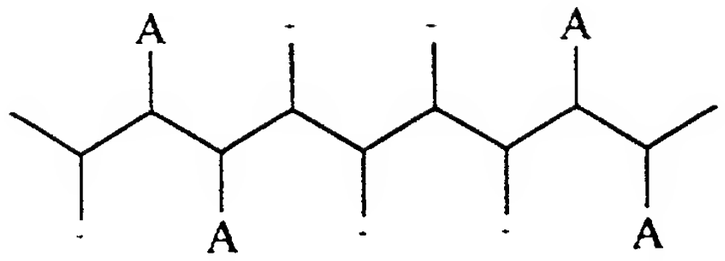


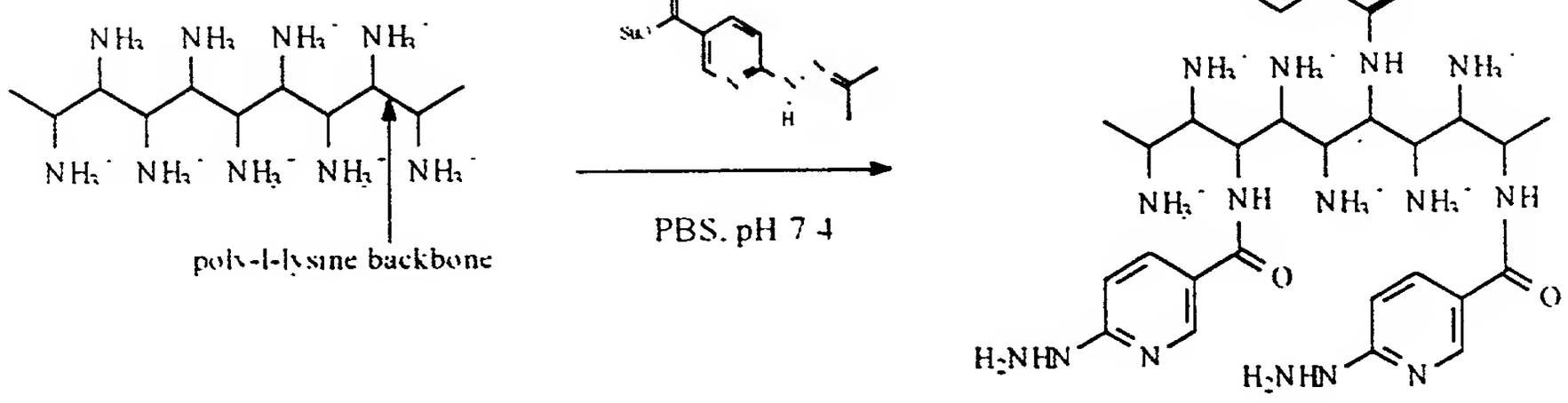
R = alkyl, aromatic or heteroaromatic group

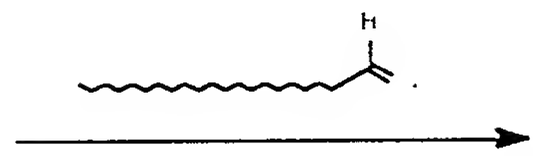
R' = H or straight, branched or cyclic alkyl moiety or aromatic or heteroaromatic moiety

carbonyl derivatives

Figure 4







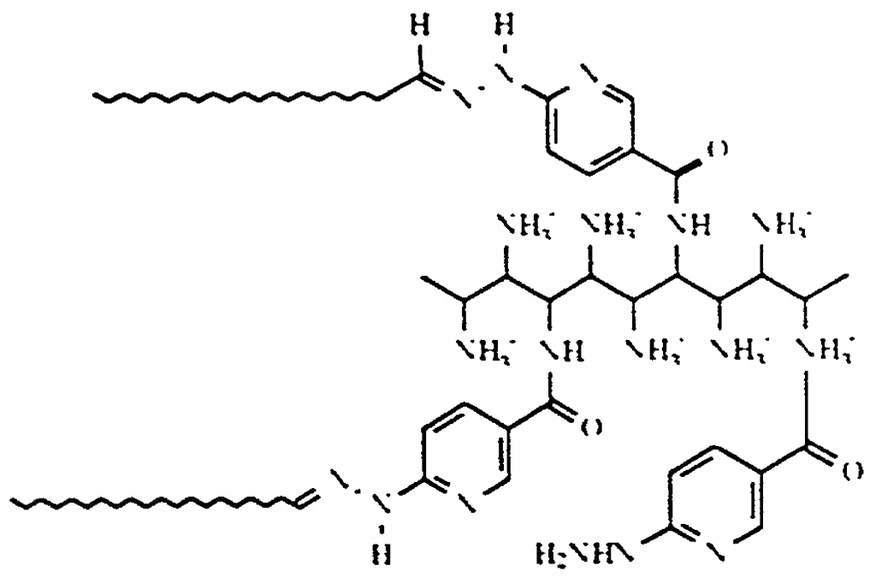


Figure 5

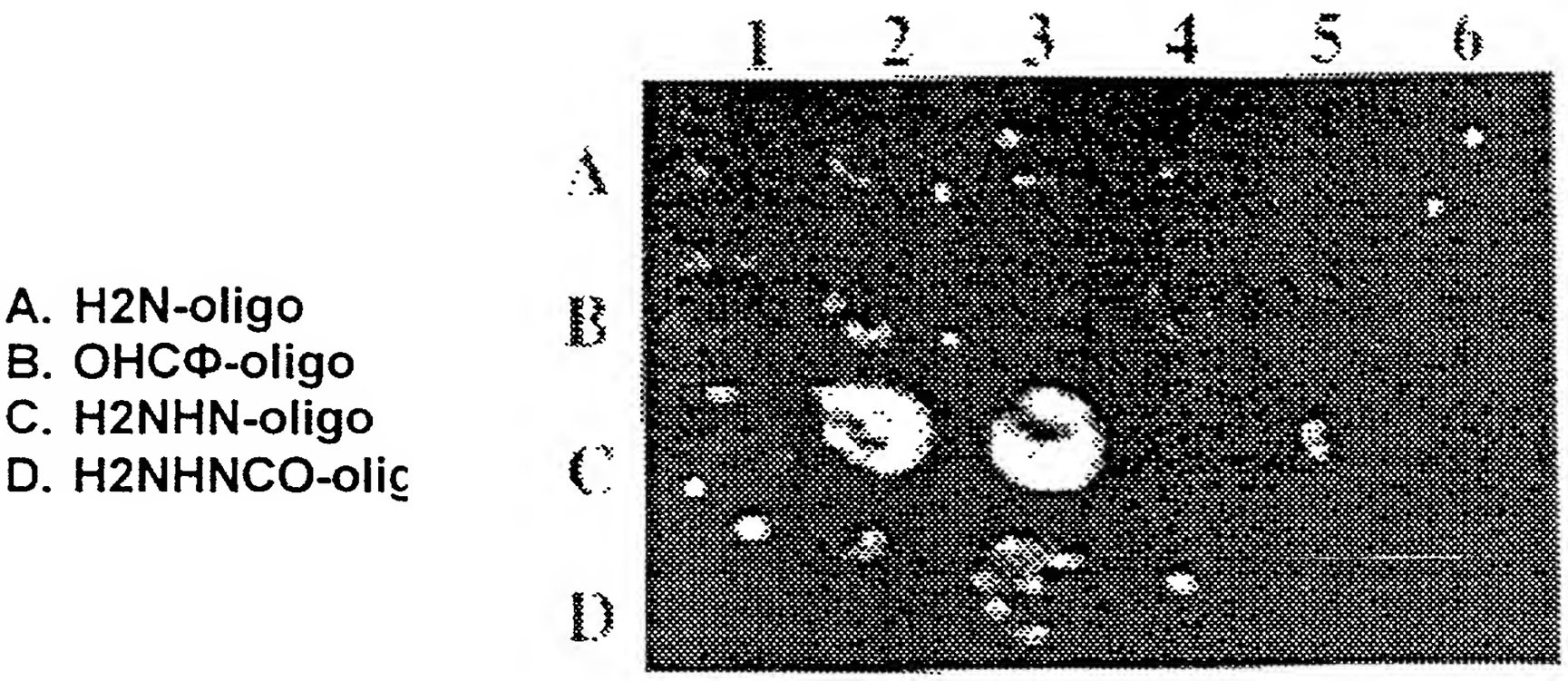
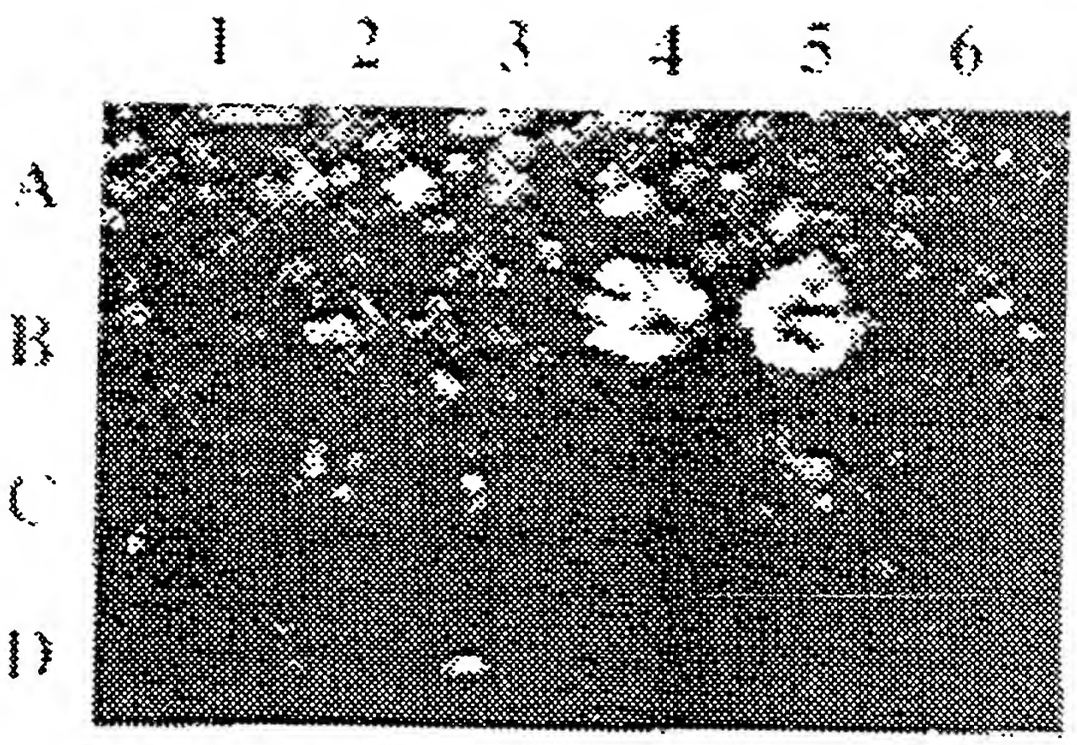


Figure X: Matrix experiment (see Example 2) demonstrating the covalent nature of the immobilization of a 5`-hydrazino oligo//sCHO/poly-l-lysine (polyK) conjugate on a amino modified glass slide following hybridization to its fluorescent complement

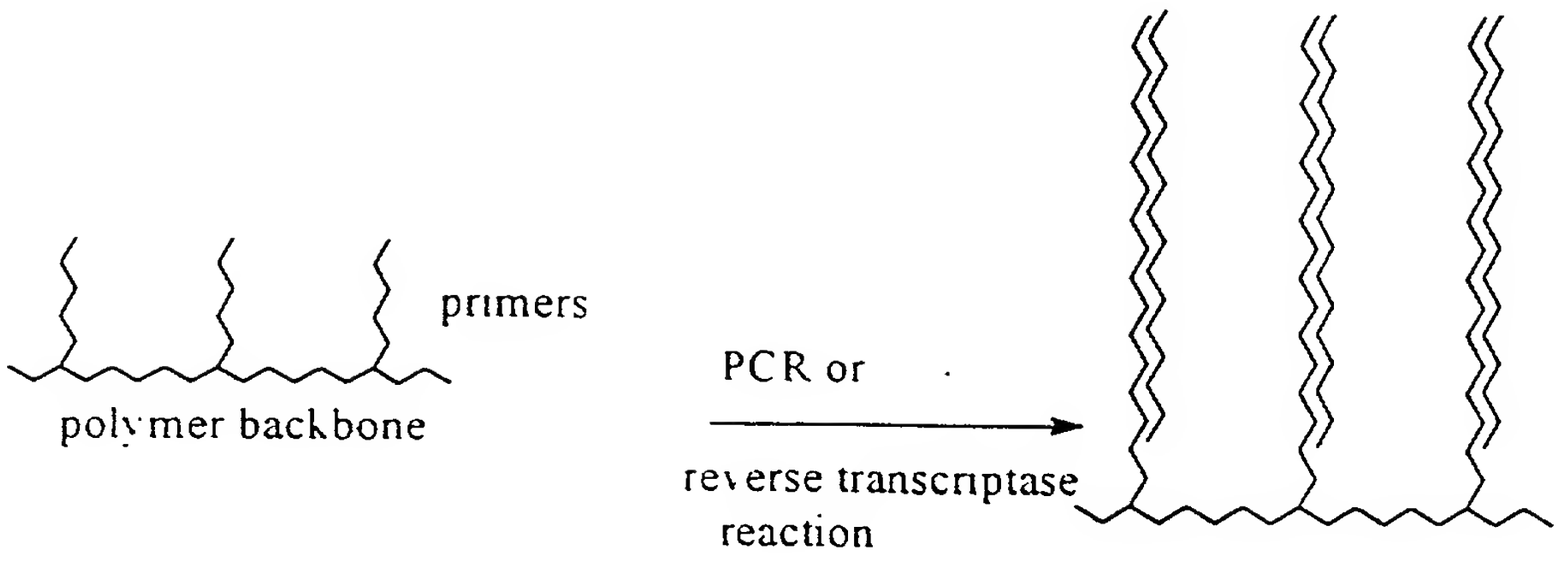
Figure 6

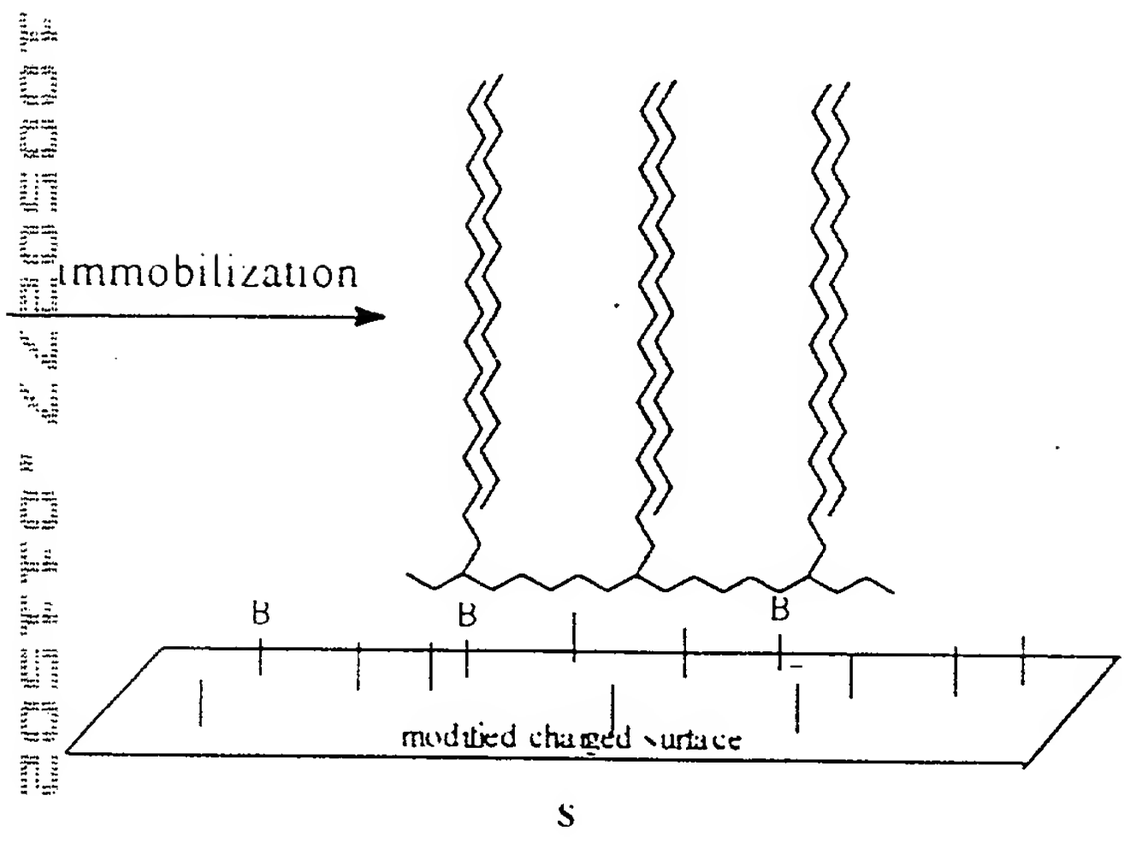
A. H2N-oligo
B. OHC-oligo
C. H2NHN-oligo
D. H2NHNCO-oligo

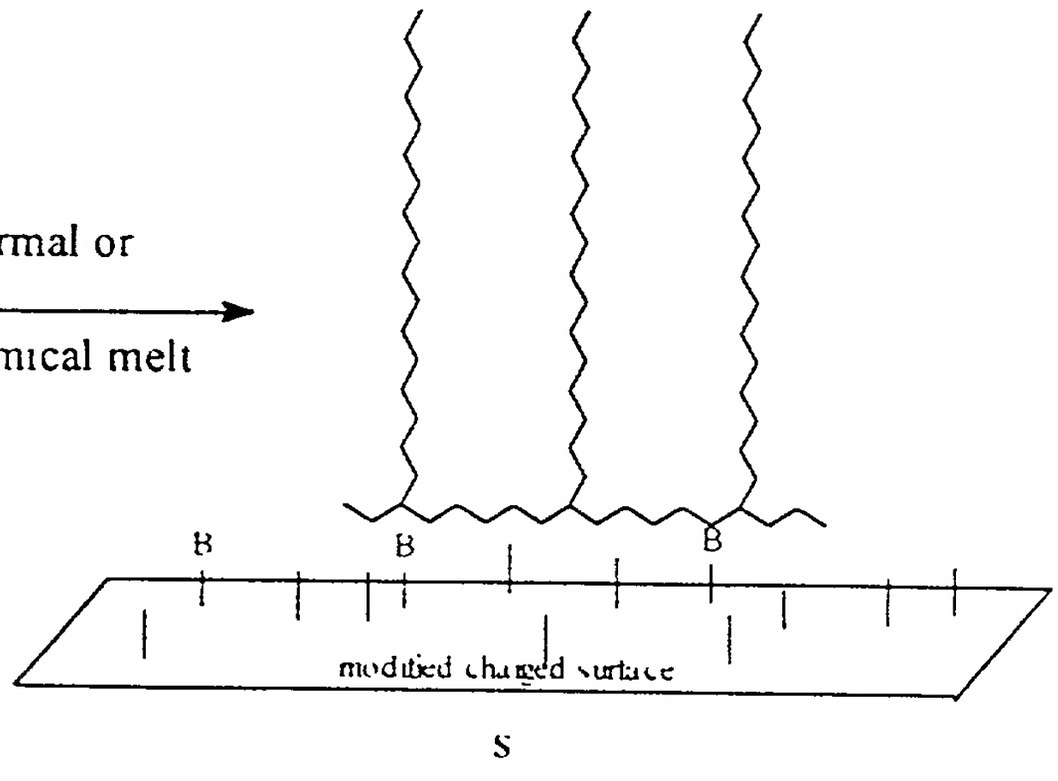


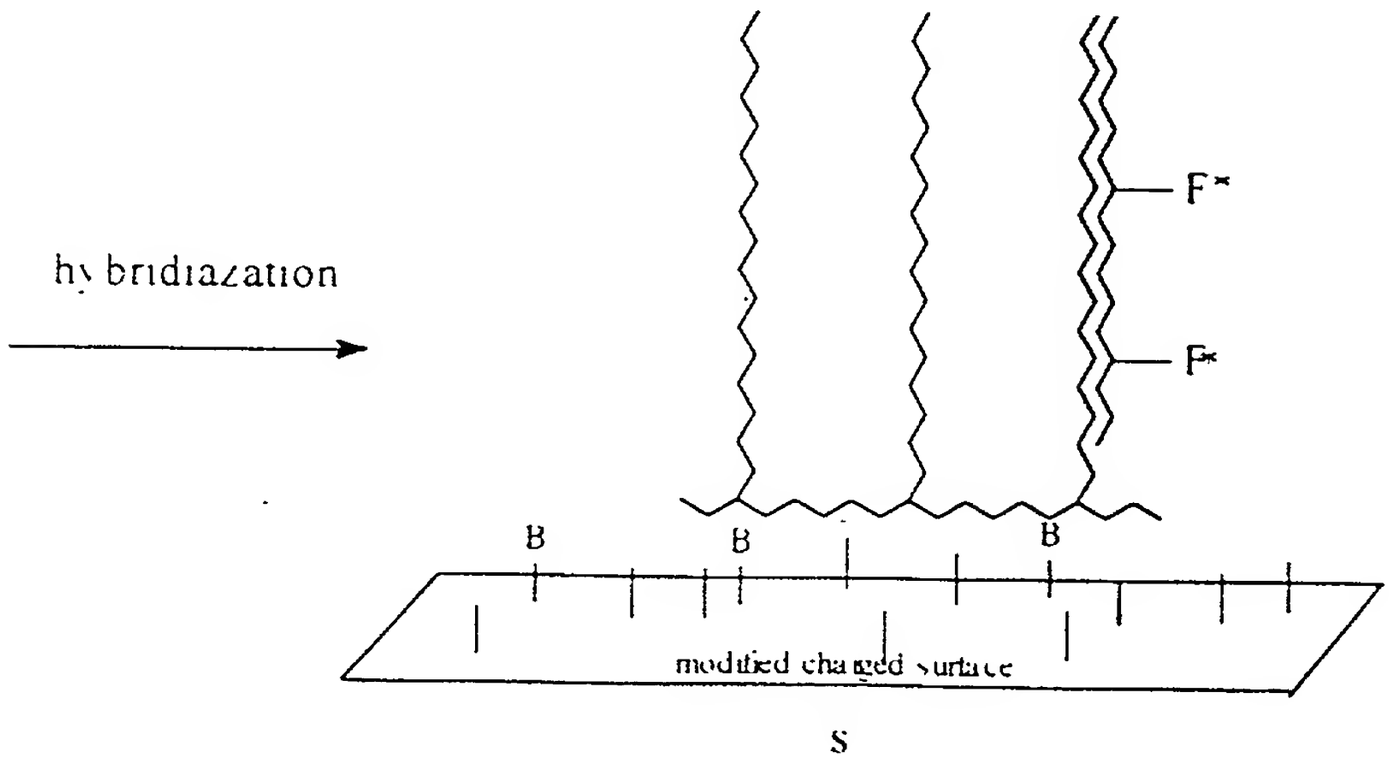
1) polyK (20K MW)
2) polyK/sCHO (10X)
3) polyK/sCHO (20X)
4) polyK/HyNic (10X)
5) polyK/HyNic (20X)
6) no polymer

Figure 7


primers
polymer backbone
PCR or
reverse transcriptase
reaction


immobilization
B
B
B
modified charged surface
S


thermal or
chemical melt
B
B
B
modified charged surface
S


hybridization
F*
F*
B
B
B
modified charged surface
S